

## INTRODUCTION

Through a partnering effort, which included the Tennessee Department of Environment and Conservation-Division of Water Pollution Control (TDEC-WPC), the U.S. Department of Agriculture-Natural Resources Conservation Service (NRCS), and the Tennessee Department of Agriculture-Ag Resources Program (ARP) and Nonpoint Source Program (NPS), eleven priority watersheds, all 8-digit in magnitude, have been submitted to EPA as Unified Watershed Assessment (UWA) projects for FY-99 and FY-00 grant funding.

Based upon the most recent water quality monitoring data available, TDEC-WPC generated a Calculated Percent Impairment map which delineated all of the state's 8-digit watersheds as being 'impaired' (category 1) or 'unimpaired' (category 2). Two other categories 'pristine' and 'insufficient data' were not found within the state. The state's 8-digit watersheds were categorized based upon the known impaired river miles divided by assessed river miles for each of the watersheds. Those watersheds with ratios greater than 10% or 15% were designated as 'impaired' and were candidates for UWA funding efforts.

From these 'impaired' watersheds, the UWA team has selected the eleven priority watersheds. NPS Program staff met with local water quality technical teams to select which 303(d) listed streams within these eleven priority watersheds would be the target of the UWA funding. The local technical team was requested to submit watershed projects for funding consideration which dealt with agricultural issues as the main focus of the project. Agriculture and Resource Extraction were selected because the proficiency of BMP implementation among partners is more advanced for these nps categories than any others.

The following sections represent concise overviews of each of these eleven priority watersheds. Time has been spent on explaining the extent of pollution, partnering efforts, monitoring of water quality before and after BMP implementation, and the rotational strategy between subwatersheds. The prospect of addressing non-agricultural and mining issues has also been explained as part of the overall plan to remove the entire 8-digit watershed from the 303(d) List.

In an effort to reduce the size of this chapter, the TDA-NPS Program has taken the liberty of explaining the functions of the more frequently listed cooperative partners in the following text. As the reader progresses through each of the priority watershed sections they will find that all of the cooperative partners have been listed in the 'Cooperating Agency Programs' subsection. Yet, in the following subsection entitled 'Cooperating Agency Programs (in detail)', the reader will find explanations for only those cooperative partners which are unique to that particular watershed.

### **TDA-Ag Resources Program**

Eight regional administrators (RAs) are located throughout the state to provide local assistance to partnering agencies. All of these individuals are trained and experienced in either agricultural conservation or water quality.

Their role in this watershed is to assist in developing new projects within the watershed by working with the local agency staff. They actually provide a quality control oversight of all implemented BMPs funded through the ARC Fund and the 319 Program. The RAs serve as TDA's approval mechanism on most, if not all, of the BMPs implemented in this watershed. And finally, they serve an important role in the NPS Program educational effort by providing assistance to the public either individually or at public gatherings.

Projects funded by the ARC Fund can supplement those funded by the NPS Program in this watershed too. This, along with the ARC Fund's ability to support information and education efforts, makes it a very important partner to the NPS effort.

### **TDA-Division of Forestry**

TDA foresters are the best individuals to consult for information regarding the reforestation of the many timbered sites in the targeted watershed. Their expertise could lead to forest growths comparable to the original growths found in this region prior to the lumbering operations of the past. TDA foresters can also serve as educators of proper forestry management/water quality techniques.

### **TDEC-Division of Ground Water Protection**

The Division of Ground Water Protection (GWP) recognizes the existing problem and will be an important partner in the effort of reducing the concentrations of pollutants reaching the receiving streams and ground water aquifers. GWP will provide septic system reconnaissance surveys to determine which systems are failing as well as providing dye trace studies to determine its path of subsurface flow.

### **TDEC-Division of Water Pollution Control**

TDEC-WPC will play a key role in the monitoring of the receiving streams before and after the implementation of BMPs throughout the surrounding watershed(s). Their experience in the watershed will provide partners with a keen sense of what water quality parameters need to be addressed. They will also perform the subsequent monitoring which will determine whether the stream(s) will be removed from the 303(d) List.

Outreach efforts will also be a mainstay of TDEC-WPC as it has the ability of conveying to the public what water quality problems actually exist and what remedial actions need to be taken. They will also play a key role in the proceedings of any working group meeting to focus the efforts of all partners in the watershed.

### **TDEC-Division of Water Supply**

TDEC-Division of Water Supply (TDEC-DWS) is interested in the advancement of any efforts that will improve water quality upstream of public water supply intakes across the state. Any abatement or remedial activity that would improve ground water quality would also be of interest to TDEC-DWS.

TDEC-DWS also manages the Source Water Assessment Program (SWAP), which is currently performing pollution source assessment studies along streams for a five mile distance upstream of a specific intake. These studies will produce inventories of sites where nonpoint source water pollution is occurring. A cooperative effort between TDA-NPS Program and TDEC-DWS will resolve many of these problems.

### **TDH-Division of Lab Services**

The Division of Lab Services will provide the pre - and post – BMP implementation water quality monitoring for this UWA-funded watershed. Analyses will be performed as are dictated by the pollutants cited on the 303(d) List. Placement of sampling sites will be based upon knowledge of the watershed problems gained from TDH-DLS interaction with local water quality team members.

The analytical results of this monitoring will provide TDEC-WPC with much needed water quality data in its efforts of determining whether the subwatershed should remain on the 303(d) List. These results will likely be used by TDEC-WPC in its efforts to develop TMDLs.

### **Tennessee Home Builders Association**

The Tennessee Home Builders Association (THBA) has the ability to convey the importance of proper BMPs to this growing construction industry. The THBA has already partnered with the City of Chattanooga in their effort to provide training and certification for developers and homebuilders. The THBA will be a partner in this watershed effort and will be requested to provide whatever assistance it could towards reducing sediment loading and other pollutants to the local receiving streams.

### **TVA-Resource Stewardship Watershed Team Program**

TVA water quality professionals have the ability to generate local involvement while providing water quality expertise. Water quality monitoring as well as aerial photography land use inventory capabilities from TVA provide substantial technical support to this watershed effort. TVA has the financial capability of funding associated projects, which could assist in promoting many of the needed BMPs for this specific watershed.

### **TWRA**

TWRA biologists and water quality professionals are well informed about what aquatic life should be present in the receiving streams as well as what needs to be done to protect and restore flora and fauna. Biological monitoring and participation in working group meetings will be provided by the local TWRA. TWRA could provide information and material to restore the local fisheries as the local water quality improves.

### **USDA-Natural Resources Conservation Service**

The local district conservationist (DC) representing the NRCS will serve as the leading technical advisor as to what agricultural practices need to be installed as well as actually designing the practices, for the most part, and making the contact with the landowner to gain permission to implement the practice(s). When design work exceeds the DC's level expertise, the NRCS engineer will be called upon to provide the design. All Ag-related practices will be in compliance with NRCS specifications.

The ability of the DC to work with landowners as well as the local SCD, TDA regional administrators, and RC&D Coordinator, if one is present, will be crucial to the success of the project. The DC will also develop and distribute public awareness materials.

USDA funds for water quality improvement are available to private landowners through the Environmental Quality Incentive Program (EQIP) and other conservation programs

through the Natural Resources Conservation Service and the Farm Services Agency.  
(NRCS)

#### **USDI-Fish & Wildlife Service**

USF&WS has been funding and assessing water quality in the streams of Tennessee for many years. This agency provides considerable expertise in the field of biological integrity as well as funding assistance in certain cases. By maintaining a partnership between USF&WS and USDA-NRCS, TDEC-WPC, and TDA-NPS Program, biological integrity information will be shared and an assessment as to the success of the Acid Mine Drainage remediation efforts will occur.

#### **USDI-Geological Survey**

The U.S. Geological Survey (USGS) will provide monitoring information obtained from their mainstem sampling sites throughout the 8-digit watershed. This information will prove to be useful in determining which parameters need to be assessed and whether the stream can be removed from the 303(d) List. The USGS will provide technical assistance as needed for local ground water issues.

#### **UT Ag. Extension Service**

UT Ag Extension Service (UTAES) has the capability of providing an important level of education and outreach to the citizens of this watershed. UTAES has the ability to provide service to agricultural and urban areas of the watershed. This local effort will stimulate the level of stewardship needed among the watershed citizenry to guarantee the successful implementation and maintenance of water quality BMPs. This effort will be easily paired with any 319 BMP implementation in the watershed.

#### **UT-County Technical Assistance Service**

As the county government initiates water quality BMPs for construction and urban runoff problems U.T.-County Technical Assistance Service (UT-CTAS) will serve an important role toward assisting the local departments with technical expertise and know-how while planning and implementation stages are in progress. This effort will be easily paired with any 319 BMP implementation in the watershed.